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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|--------------------------|---------------------|------------------|
| 10/049,362 | 02/06/2002 | Thomas Gordon Beck Mason | 30794.61USWO | 1006 |
| 22462 | 7590 | 05/04/2005 | EXAMINER | |
| GATES & COOPER LLP HOWARD HUGHES CENTER 6701 CENTER DRIVE WEST, SUITE 1050 LOS ANGELES, CA 90045 | | | NGUYEN, DUNG T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2828 | |

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,362

Applicant(s)

MASON ET AL.

Examiner

Dung (Michael) T. Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The declaration filed on 03/28/05 under 37 CFR 1.131 is sufficient to overcome the Fish reference.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al. (US5543353).

With respect to claim 1, Suzuki shows in Fig.7A-7C and 9 a tunable laser source comprising an active region 4 (col.7, l.14) on top of a thick, low bandgap (since the claim does not recite how thick and how low bandgap of the waveguide; therefore the examiner assumes that the Suzuki waveguide 3 has a thickness and a low bandgap as recited) , single common waveguide 3 (col.6, l.37), wherein both the waveguide layer and the active region are fabricated between a p-doped region

(col.6, l.38) and an n-doped region (col.6, l.27); and an electro-absorption modulator (col.7, l.16-17) integrated into the semiconductor laser (col.7, l.4-5 and 15-16), wherein the modulator shares the waveguide with the semiconductor laser, and the waveguide layer is designed to provide high index tuning efficiency in the laser and good reverse bias extinction in the modulator (it is inherent that in order to improve for high speed modulation in the tunable laser source the waveguide layer must be designed to provide high index tuning efficiency in the laser and good reverse bias extinction in the modulator).

With respect to claim 7, Suzuki disclose a blocking junction (col.7, l.9-10) to block current leakage and to reduce parasitic junction capacitance (col.7, l.11-12) of the modulator.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US5543353) in view of Coldren (US4896325).

With respect to claims 2-3, Suzuki disclose all limitations of the claims except for a sampled grating back mirror, a phase control section, a gain section, and a sampled grating front mirror. Coldren teaches in Fig.8 a sampled grating back mirror 40, a phase control section 32, a gain section 36, and a sampled grating front mirror 42. For the benefit of continuously lasing tuning in a multi-section tunable laser with differing multi-element mirrors, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Suzuki what is taught by Coldren.

With respect to claim 8, Coldren discloses in col.8, l.5-10 the laser is tuned by adjustment of control current for the mirrors. For the benefit of providing a diode laser in the selective tuning capable over an extended wavelength (col.8, l.40-42), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Suzuki what is taught by Coldren.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US5543353) in view of Berger et al. (US5208821). Suzuki disclose all limitations of the claim except for the waveguide layer is a buried heterostructure waveguide that includes multiple quantum wells (MQW). Berger teach the waveguide layer is a buried heterostructure waveguide that includes multiple quantum wells (MQW) 26 (col.1, 1.11-21). For the benefit of the substitution of an unreliable ridge waveguide lasers with MQW that are weakly index-guided and mode-unstable (col.1, 1.14-21), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Suzuki what is taught by Berger.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US5543353) in view of Yap (US5138626). Suzuki disclose all limitations of the claim except for the waveguide layer is a ridge waveguide that includes multiple quantum wells (MQW). Yap teaches the waveguide layer is a ridge waveguide that includes multiple quantum wells (MQW) (col.1, 1.51-52). For the benefit of a laser device producing a reliable performance and yielding a simple fabrication (col.1, 1.63-65), it would have been obvious to one having ordinary skill

in the art at the time the invention was made to provide Suzuki what is taught by Yap.

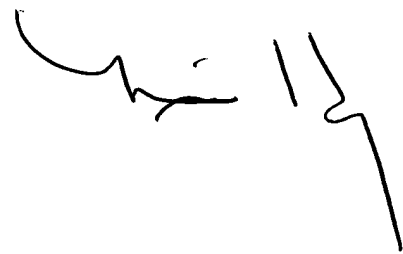
Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Michael Dung Nguyen



MINSUN CHAMBERLAIN
PRIMARY EXAMINER

Application/Control Number: 10/049,362
Art Unit: 2828

Page 7